**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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| Application of: | BELTZER et al. | | |
| Serial No.: | 09/932,613 | ART UNIT: | 1644 |
| Filed: | August 17, 2001 | EXAMINER: | ROARK, J. |
| Entitled: | BINDING POLYPEPTIDES AND METHODS BASED THEREON | | |

Attorney Docket No.: DYXHGS-025.1 US



Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**RESPONSE TO A RESTRICTION REQUIRMENT**
**EXPRESS ELECTION AND TRAVERSE UNDER 37 CFR §1.143**

Sir:

In response to the Office Action dated April 8, 2003 requiring election among the restricted groups of invention, Applicants provisionally elect Group XV *and* additional compounds/disorders with traverse as described below, and additionally request reconsideration and withdrawal of the requirement of restriction under 37 CFR § 1.143 for the reasons set forth below.

REMARKS

In the Office Action at page 1, paragraph no. 3, the Examiner has presented a restriction of Applicants' invention, as between:

Group I (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:1**;

Group II (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:2**;

Group III (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:3**;

Group IV (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:4**;

Group V (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:5**;

Group VI (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:6**;

Group VII (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:7**;

Group VIII (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:8**;

Group IX (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:9**;

Group X (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:10**;

Group XI (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:11**;

Group XII (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression

or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:12**;

Group XIII (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:446**;

Group XIV (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:447**; and

Group XV (Claims 1-71), drawn to methods of treating, preventing or ameliorating a disease or disorder associated with aberrant BLyS or BLyS receptor expression or activity by administration or contacting with *a BLyS binding polypeptide comprising the amino acid sequence set forth in* **SEQ ID NO:448**.

The Examiner reasons as follows:

> "Groups I-XV are different methods. Each method differs with respect to ingredients, method steps and endpoints; therefore, each method is patentably distinct. These inventions are distinct for the reasons given above. In addition, they have acquired a separate status in the art as shown by different classification and/or recognized divergent subject matter. Further, even though in some cases the classification is shared, a different field of search would be required based upon the structurally distinct products recited and the various methods of use comprising distinct method steps. Moreover, a prior art search also requires a literature search, which would not be completely co-extensive. It is an undue burden for the examiner to search more than one invention. Therefore restriction for examination purposes as indicated is proper." (Office Action, paragraphs nos. 4 and 5.)

Applicants traverse this requirement and request consideration of all claims together in this application for the reasons set forth below.

The present invention relates to Applicants' discovery of novel methods for detecting, diagnosing, monitoring, determining prognosis for, preventing, treating and/or ameliorating diseases or disorders associated with BLyS (not solely "aberrant" BLyS) or BLyS receptor expression or inappropriate BLyS or BLyS receptor function in an animal. The methods utilize novel polypeptides and families of polypeptides that specifically bind to B lymphocyte stimulator protein (BLyS) and/or BLyS polypeptides.

The Examiner's original grouping of the claims indicates that each of the formulas of BLyS binding peptides, which are utilized in the methods described in the application and recited in the claims,

have been regarded as a separate invention that must be prosecuted separately. However, because the BLyS binding peptides utilized in the methods of the present invention share common structural and biochemical features, fractionation of the claims as required in the Office Action would lead to unnecessarily repetitive examination and an unfairly protracted and expensive series of related applications to be filed by Applicants to obtain the patent protection to which they are entitled.

For example, it is noted that most of the sequences contain a cysteine-bracketed peptide loop containing an internal tetrapeptide of the formula Asp-Xaa-Leu-Thr (SEQ ID NO: 446). Moreover, the sequences are not unrelated sequences; they are all BLyS binding peptides and share certain structural features explained in the specification. Therefore, as the BLyS binding peptides of the invention share common, defined, structural motifs and the same molecular targets, the uses for these peptides should *not* be considered separately.

In view of these common features, it is seen that all of the BLyS binding peptides, which are utilized in the methods described in the application and recited in the claims, may be efficiently searched together, without placing and undue burden on the Examiner.

Classification

In the Office Action (page 4, paragraph no. 5) the Examiner asserts that the present application contains distinct inventions that have acquired a separate status in the art, as shown by their different classification. Applicants respectfully disagree.

Proper restriction between distinct inventions claimed in the same application requires (1) that the inventions must be independent and distinct as claimed *and* (2) that there must be a serious burden placed on the Examiner by *not* requiring restriction. If either criterion is not met, restriction is *not* proper. MPEP § 803.

Applicants note that Groups I-XI of the present invention are provisionally classified in one class, i.e., Class 514, subclass 9. Moreover, an application cannot be held to contain distinct inventions by mere virtue of it being drawn to separate subclasses within the Patent and Trademark Office classification system. There are many situations where claims are permissibly drafted to include a reference to more than one statutory class of invention (*See,* MPEP § 2173.05(p)). In the present case, from the discussion above it is clear that the subject matter of the original claims cannot properly be divided into distinct inventions due to the interrelatedness of the subject matter as claimed. Finally, in view of the initial classification and the way in which the claims are worded, Applicants submit that the search of any of the methods found in Groups I-XV, would reveal the *same* art that is relevant to the

other groups, and therefore no serious burden is on the Examiner if a restriction is not made. Instead, the burden will be on the Applicants, who will be required to increase their expenses to address the same search before full patent protection of their original invention is obtained.

For the reasons set forth above, Applicants respectfully submit that the claims as grouped for restriction by the Examiner do not represent separate or distinct inventions, and the search of all claims together in one application would not place a serious burden on the Examiner. Accordingly, withdrawal of the restriction requirement is requested.

Species Election

In additional to imposing a 15-way restriction, the Examiner requires election of a single polypeptide sequence for examination and a specific disease or disorder for which the method claims of the present invention are directed. Additionally, the Examiner further requires Applicants to identify whether the effect of the elected peptide on the disease or disorder or aspect of B cell function recited is inhibitory or stimulatory.

Claims are properly restricted to a single species only if the species are specifically different embodiments of the claimed invention, are patentably distinct from each other, and are mutually exclusive. See, MPEP §806.04(e), (f), and (h). In the present case, **without addressing whether the recited BLyS binding polypeptides of the claims are specifically different and patentably distinct embodiments**, they are not mutually exclusive, due to the similarity between the recited sequences: All of the recited polypeptides within a restriction group have a common structural motif and the ability to specifically bind B lymphocyte stimulator protein (BLyS) and/or BLyS polypeptides. Since the families of polypeptides in the groups are related in structure and activity, the examination of this application should not be confined to one particular structure.

Conclusion and Provisional Election

Applicants respectfully submit that in view of the foregoing remarks all the claims as originally filed are seen to relate to a single inventive concept, and the claims are in a form and are of the sort that is properly viewed as relating to a single invention that should not be restricted, under the provisions of 37 CFR § 1.141(b). Applicants request that the restriction requirement of the Office Action of April 8, 2003 be reconsidered and withdrawn.

Although, for reasons set forth above, Applicants believe that the restriction is improper and uncalled for, and without in any way acquiescing in the reasons for restriction set forth in the Office

Action, but in order to be fully responsive to the Office Action, Applicants provisionally elect for examination the claims of Group XV, i.e., Claims 1-71, methods employing members of the BLyS-binding peptide family (15) (SEQ ID NO: 448). A further species election is made of the polypeptide comprising the sequence Trp-Tyr-Asp-Pro-Leu-Thr-Lys-Leu-Trp-Leu (SEQ ID NO:457). Applicants further elect the specific treatment of Claim 67, i.e., a method for increasing BLyS mediated lifespan of B cells. This election of a particular method is believed also to satisfy the requirement of electing the desired effect of using the elected polypeptide. Applicants acknowledge the Examiner's determination that Claim 69 is a generic linking claim and that upon allowance of Claim 69 Applicants will be entitled to examination of additional species.

Respectfully submitted,

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May 8, 2003
date

Stephanie L. Leicht

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GP# 1644

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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| In re Application of: | Beltzer et al. |
| Serial No.: | 09/932,613 |
| Filed: | August 17, 2001 |
| Entitled: | BINDING POLYPEPTIDES AND METHODS BASED THEREON |

ART UNIT: 1644

EXAMINER: ROARK, J.

Attorney Docket No.: DYXHGS-025.1 US



Commissioner for Patents
P.O. Box 1450
Arlington, VA 22313-1450

**TRANSMITTAL LETTER**

Sir:

Transmitted herewith are: [X] Response to Election/Restriction Requirement; and [X] a return postcard.

FEE FOR ADDITIONAL CLAIMS

[X] A fee for additional claims is not required.
[ ] A fee for additional claims is required. The additional fee has been calculated as shown below:

| | CLAIMS REMAINING AFTER AMENDMENT | HIGHEST NUMBER PREVIOUSLY PAID FOR | NUMBER OF EXCESS CLAIMS | RATE | FEES DUE |
|---|---|---|---|---|---|
| TOTAL CLAIMS | -- | 71 | 0 | × $18 | = 0.00 |
| INDEPENDENT | -- | 23 | 0 | × $84 | = 0.00 |
| FIRST INTRODUCTION OF MULTIPLE DEPENDENT CLAIM | | | | +$280 | = 0.00 |
| **TOTAL FEES DUE** | | | | | = **0.00** |

PAYMENT OF ADDITIONAL FEES

[ ] A check including the amount of $130.00 in payment of the fee for filing an oath or declaration under 37 CFR §1.16(e) is transmitted herewith.

[ ] A check in the amount of $____ in payment of the fee for recording ____ patent assignments under 37 CFR §1.21(h) ($40.00 ea.) is transmitted herewith (check no. 2160).

[X] The Commissioner is hereby authorized to charge payment of any additional fees required under 37 CFR §1.16 or §1.17 in connection with the paper(s) transmitted herewith, or to credit any overpayment of same, to Deposit Account No. 50-0268. A duplicate copy of this transmittal letter is transmitted herewith.

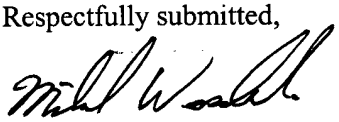
PETITION FOR EXTENSION OF TIME

[ ] Extension is requested under 37 CFR §1.136(a), and the following extension fee is applicable for the paper(s) filed herewith: [ ] $110.00 for response within first month pursuant to 37 CFR §1.17(a)(1);
[ ] $410.00 for response within second month pursuant to 37 CFR §1.17(a)(2);
[ ] $930.00 for response within third month pursuant to 37 CFR §1.17(a)(3);
[ ] $1,450.00 for response within fourth month pursuant to 37 CFR §1.17(a)(4);
[ ] $1,970.00 for response within fifth month pursuant to 37 CFR §1.17(a)(5).

[ ] A check including the amount of [ ] $110.00 [ ] $410.00 [ ] $930.00 [ ] $1,450.00 [ ] $1,970.00 in payment of the extension fee is transmitted herewith. {check no. _____ }

[X] The Commissioner is hereby authorized to charge payment of any additional fees required in connection with the paper(s) transmitted herewith, or to credit any overpayment of same, to Deposit Account No. 50-0268 . A duplicate copy of this transmittal letter is transmitted herewith.

Respectfully submitted,



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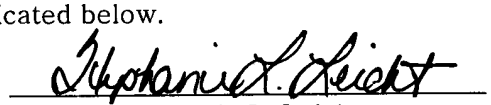
May 8, 2003
Date



Stephanie L. Leicht